



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,675	07/15/2003	David Punsalan	200210251-1	9644
22879 7590 02/02/2009 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400				
EXAMINER WANG, EUGENIA				
ART UNIT 1795		PAPER NUMBER		
NOTIFICATION DATE 02/02/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM  
mkraft@hp.com  
ipa.mail@hp.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* DAVID PUNSALAN,  
PETER MARDILOVICH, and GREGORY S. HERMAN

---

Appeal 2009-0873  
Application 10/620,675  
Technology Center 1700

---

Decided: January 29, 2009

---

Before EDWARD C. KIMLIN, TERRY J. OWENS, and  
JEFFREY T. SMITH, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-18, and 55-65.  
Claims 66 and 67 stand withdrawn from consideration. We have jurisdiction  
under 35 U.S.C. §§ 6 and 134. Claim 1 is illustrative:

1. A method of manufacturing an electrolyte comprising:  
  
coupling a substrate to a charged electrode; and  
  
electrodepositing a polymeric electrolyte on said substrate.

The Examiner relies upon the following references as evidence of obviousness (Ans. 3-4):

Tanabe	5,002,647	Mar. 26, 1991
Steck	6,258,861 B1	Jul. 10, 2001
Takeuchi	2001/0014420 A1	Aug. 16, 2001
Schucker	2002/0172871 A1	Nov. 21, 2002

Appellants' claimed invention is directed to a method of making an electrolyte that has utility in a fuel cell. The method entails electrodepositing a polymeric electrolyte on a substrate that is coupled to a charged electrode. According to Appellants, they have "discovered that such an electrolyte reduces the likelihood of swelling in a fuel cell while increasing structural support" (App. Br. 3).

Appealed claims 1, 2, 4-18, 55, 57, 58, and 61-65 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schucker in view of Takeuchi and Tanabe. Claims 2-7 and 60-64 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the stated combination of references further in view of Steck. Also, claims 56 and 59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Schucker in view of Takeuchi and Tanabe.

We have thoroughly reviewed the respective positions advanced by Appellants and the Examiner. In so doing, we concur with Appellants that the prior art applied by the Examiner fails to establish a prima facie case of

obviousness for the claimed subject matter. Accordingly, we will not sustain the Examiner's rejections.

Schucker, the primary reference in all the rejections, discloses a method of manufacturing an electrolyte by depositing a precursor of a porous substrate onto an electrically conductive substrate material, such as graphite, and then electrophoretically depositing an electrolyte material on the precursor of a porous substrate to form a green structure, which green structure is dried and sintered. As acknowledged by the Examiner, and emphasized by Appellants, Schucker does not teach that the electrophoretically deposited electrolyte material can be a polymeric material. Schucker teaches beta-alumina and  $\text{Na}_3\text{Z}_2\text{Si}_2\text{PO}_{12}$  as electrolyte materials.

To remedy the deficiency in Schucker, the Examiner cites Takeuchi for teaching that the ionic conductive material for use as a membrane in a fuel cell can be the inorganic compound disclosed by Schucker or a polymeric compound, such as Appellants' perfluorosulfonate ionomer (Nafion). Based on the combined teachings of Schucker and Takeuchi, the Examiner draws the legal conclusion that "it would have been obvious to one of ordinary skill in the art to substitute a perfluorosulfonate ionomer for a NASICON as the electrolyte on the porous substrate of Shucker, because Nafion and NASICON are considered functionally equivalent ionic conductive material [sic, materials]" (Ans. Bridging 4-5).

The flaw in the Examiner's reasoning is that, although it may have been obvious to use a polymeric material to make an electrolyte for use in a fuel cell, Takeuchi provides no teaching or suggestion of electrodepositing the polymeric material on a substrate that is coupled to a charged electrode.

As stressed by Appellants, Takeuchi expressly teaches laminating polymeric ion conductive materials. While Takeuchi teaches that the polymeric laminate may be formed by “a spray method, a coating method, a dipping method, a spin coating method or another optional method” ([0187]), the reference provides no teaching or suggestion that the polymeric layer can be formed by the presently claimed electrodeposition method. Consequently, in the absence of some prior art teaching that it was known in the art to form a polymeric electrolyte by electrodeposition, the Examiner’s legal conclusion of obviousness lacks the requisite evidentiary basis. The Examiner cites Tanabe and Steck for teachings other than electrodepositing a polymeric electrolyte on a substrate.

In conclusion, based on the foregoing, we are constrained to reverse the Examiner’s rejections.

**REVERSED**

ssl

HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400